CAA 112(r) INSPECTION REPORT

Name:	John W. Pray Water Treatment Plant	Date:	August 27-28, 2013
Address:	600 Phinney Park Drive, Fort Dodge, IA 50501		
County:	Webster	Phone No:	515.576.6101
Case No:	13IA0827	High Risk:	No
RMP No:	1000 0013 3134	FRS No:	1100 1308 6178
CAA Title V:	No	Program Level:	Program 3
Process:	Public water treatment plant for Fort Dodge, IA and some surrounding areas using chlorine gas as a disinfectant prior to distributing drinking water to residences and businesses.		

SUMMARY OF OBSERVATIONS

A review of John W. Pray Water Treatment Plant documents and process equipment revealed the following deficiencies:

1. **John W. Pray Water Treatment Plant failed to develop a management system to oversee the implementation of the risk management program elements, assign a qualified person or position that has overall responsibility for the RMP, and document persons or positions, other than the qualified individual, who have been assigned responsibilities for implementing elements per 40 CFR 68.15(a-c).**
2. **John W. Pray Water Treatment Plant failed to review and update the offsite consequence analyses at least once every five years per 40 CFR 68.36(a).**
3. **John W. Pray Water Treatment Plant failed to maintain the records for the offsite consequences analyses per 40 CFR 68.39(a-e).**
4. **John W. Pray Water Treatment Plant failed to complete a compilation of written process safety information pertaining to the technology of the process that included process chemistry and consequences of deviation per 40**

CFR 68.65(c)(1)(ii & v).

5. John W. Pray Water Treatment Plant failed to complete a compilation of written process safety information pertaining to the equipment in the process that included documentation that the equipment complies with recognized and generally accepted good engineering practices per 40 CFR 68.65(d)(2).

6. John W. Pray Water Treatment Plant failed to establish a system to promptly address the process hazard analysis team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed and communicate the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions per 40 CFR 68.67(e).

7. John W. Pray Water Treatment Plant failed to update and revalidate the initial process hazard analysis at least every five years after its completion by a team meeting the requirements in §68.67(d) to assure that the process hazard analysis is consistent with the current process per 40 CFR 68.67(f).

8. John W. Pray Water Treatment Plant failed to retain all PHAs and updates as well as resolutions for the life of the process per 40 CFR 68.67(g).

9. John W. Pray Water Treatment Plant failed to develop and implement written operating procedures that provided clear instructions for safely conducting activities involved in the covered process that addressed each operating phase, operating limits, safety and health considerations, and safety systems per 40 CFR 68.69(a)(1-4).

10. John W. Pray Water Treatment Plant failed to certify annually that the operating procedures are current and accurate per 40 CFR 68.69(c).

11. John W. Pray Water Treatment Plant failed to develop and implement safe works practices to provide for opening process equipment or piping and control over entrance into a stationary source by maintenance, contractors, laboratory, or other support personnel per 40 CFR 68.69(d).

12. John W. Pray Water Treatment Plant failed to provide refresher training at least every three years, and prepare a record which contains the identity of the employee, the date of training and the means used to verify that the employee understood the training per 40 CFR 68.71(b-c).

13. John W. Pray Water Treatment Plant failed to establish and implement written procedures to maintain the ongoing integrity of process equipment per 40 CFR 68.73(b).

14. John W. Pray Water Treatment Plant failed to document each inspection and test that has been performed on process equipment. The documentation did not identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number or other identifier of the equipment on which the test or inspection was performed, a description of the test or inspection and the results of the inspection or test per 40 CFR 68.73(d)(4).

15. John W. Pray Water Treatment Plant failed to assure that the construction of new plants and equipment, as it is fabricated, is suitable for the process application for which they will be used. There was also a failure to perform appropriate checks and inspections to assure that equipment was installed properly and consistent with design specifications and the manufacturer's instructions per 40 CFR 68.73(f)(1 & 2).

16. John W. Pray Water Treatment Plant failed to establish and implement written procedures to manage changes to process chemicals, technology, equipment, and procedures: and changes to stationary sources that affect a covered process and other elements of 40 CFR 68.75(a - e).

17. John W. Pray Water Treatment Plant failed to perform a pre-startup safety review for modified stationary sources

when the modification was significant enough to require a change in the process safety information and other elements of 40 CFR 68.77(a-b).

18. John W. Pray Water Treatment Plant failed to certify they have evaluated compliance with the provisions of Subpart D at least every three years to verify that procedures and practices developed under this subpart are adequate and are being followed. They also failed to have an audit conducted by at least one person knowledgeable in the process; develop a report of the findings; promptly determine and document an appropriate response to the findings; document that deficiencies have been corrected and retain the two most recent compliance audit reports per 40 CFR 68.79(a-e).

19. John W. Pray Water Treatment Plant failed to prepare an investigation report at the conclusion of an incident investigation that included at a minimum the date of the incident, date investigation began, description of the incident, factors that contributed to the incident and any recommendations resulting from the investigation. They also failed to establish a system to promptly address and resolved any incident report findings; document any resolutions and corrective actions; review the report with all affected personnel and retain any reports for five years per 40 CFR 68.81(d-g).

20. John W. Pray Water Treatment Plant failed to develop a written plan of action regarding the implementation of the employee participation required per 40 CFR 68.83(a).

21. John W. Pray Water Treatment Plant failed to issue hot work permits for such work near covered processes per 40 CFR 68.85(a).

22. John W. Pray Water Treatment Plant failed to develop and implement safe work practices consistent with §68.69(d) to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas per 40 CFR 68.87(b)(4).

23. **John W. Pray Water Treatment Plant failed to provide an executive summary in the RMP that included a brief description of planned changes to improve safety per 40 CFR 68.155(f).**

24. **John W. Pray Water Treatment Plant failed to review and update the RMP at least once every five years from the date of its initial submission or most recent update required by §68.190(b)(2-7) per 40 CFR 68.190(b)(1).**

During the inspection, numerous inquiries were made for each piece of documentation required under the rule. When Mr. Horrell was unsure of what such documentation would look like, he was shown generic examples and formats or was provided a thorough explanation of what information the requested documentation should contain.

Mr. Horrell told me on several occasions that all of the documents he had for the RMP were present on the table at which we were working. I scanned all of the documents that were present on the table. It should be noted that Mr. Horrell was also the Water Plant Superintendent at the time of the initial RMP submission in June 1999.

The water treatment plant is a Program 3 under the Iowa State Plan approved by OSHA. In the other three states in EPA Region VII, a publicly owned water treatment plant that is operated by public employees would be classed as a Program 2 and not a Program 3.

INTRODUCTION

I, Bob Munson, Grantee with the National Older Workers Career Center (NOWCC), representing the U.S. Environmental Protection Agency (EPA), Region VII, inspected John W. Pray Water Treatment Plant (JWPWTP), Fort Dodge, IA on August 27-28, 2013. I spoke with Mr. John Horrell, Water Plant Superintendent, on Tuesday August 7, 2013 to arrange the inspection date and starting time of 0800 hours on August 27, 2013. That same day, I confirmed the inspection with an email to Mr. Horrell. The email had a copy of the checklist attached. The email informed him of the documents that I would review. He was also informed of the right of employees to attend the document review and equipment inspection. I asked that a notice of the inspection be placed for employee review.

An attempt in late May 2013 to schedule the inspection for June 4, 2013 had to be abandoned due to major construction at the facility. Mr. Horrell indicated he would be unable to concurrently oversee the construction, devote time needed for the RMP inspection, and do justice to either.

JWPWTP was selected for inspection based on the lack of submission of a 5-year update due in June 2009. The facility did change the RMP submission in December 2010 but did not update it.

I was accompanied on the inspection by Mr. Ralph Martin, Senior Environmental Health Specialist from the Lincoln/Lancaster County Health Department in Lincoln, NE. Lincoln/Lancaster County is seeking delegation of authority for the CAA 112(r) program. Mr. Martin was attending as a trainee inspector to observe the inspection process for a RMP Program 3 water treatment plant. Permission was asked and received from Mr. Horrell for Mr. Martin to attend.

I conducted the inspection to determine if the facility complies with Section 112(r) of the Clean Air Act (CAA), as amended in 1990. The inspection also included reporting provisions of the Emergency Planning and Community Right to Know Act (EPCRA). I did not determine if the facility complies with the release reporting provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

EPA's regulations describing how these laws are to be implemented are found in the Code of Federal Regulations, Title 40, Part 68 (CAA), 355, 370, and 372 (EPCRA). The law and the implementing regulations 40 CFR 68, Chemical Accident Prevention Program (CAPP) require that the facilities must submit a complete Risk Management Plan (RMP) to the EPA for those regulated chemicals they process in amounts above the applicable threshold quantities after June 21, 1999 and to implement the program described in the RMP.

Attachment #6, pages 1-4 contains the information required by Annex C from EPA 550-K-11-001 (Guidance for Conducting RMP Inspections) that is not contained in this report. The completed RMP submissions and/or corrections for this facility can be found on the DVD in the folder named RMP. The photographs on pages 5-7 are aerial views of the facility and the surround countryside taken from satellite imagery available online. These particular photographic images were taken from Google Earth Pro.

All attachments mentioned in this inspection report are also in a folder on the accompanying DVD. The folder numbers on the DVD correspond to the

attachment numbers. As an example, Attachment #8 is in Folder #8. Because of the volume of documentation received on some elements, some of the material is not included in an attachment however; all of the documentation received relative to that element is in the corresponding folder.

The DVD itself is Attachment #19 and contains a copy of this inspection report, the original documents obtained, documents obtained post inspection by post or email, photographs taken during the inspection, current and past RMP submissions, emails between JWPWTP and the compliance inspector, checklists, and completed forms. There is an additional folder on the DVD named *Compliance Assistance* that contains files I provided to Mr. Horrell as examples of information of RMP elements, links to websites, and calculations of distances to endpoints for various scenarios.

Post inspection I received one email with attachments addressing the preliminary findings of the inspection. The one document and three photographs received can be found in a file on the DVD in the folder named *Post Inspection Docs & Pixs.*

HISTORY OF BUSINESS

The water treatment plant came online in 1970. It was named after a longtime city employee of Fort Dodge, IA who rose through the ranks. His longtime service to the city of Fort Dodge was recognized by naming the water treatment plant in his memory.

The facility underwent modernization and replacement of failing components that was completed with the plant back online by 2001.The project highlights included a new control room, addition of two booster-pumping stations at remote locations, and a chemical feed addition of two new chlorinators.

In 2013, the facility underwent an upgrade that doubled the capacity of the daily output to 10 million gallons per day. This increase was needed due to an agreement to supply the ag-industrial park known as Iowa's Crossroads of Global Innovation. The ag-industrial park includes CJ Bio America, Cargill, and Valero Renewables.

An additional part of the upgrade was a requirement under an administrative order from the Iowa Department of Natural Resources. This order required an operational emergency backup power source for the John W. Pray Water Treatment Plant, including the ground storage tank at the water treatment plant and the booster pump serving the tower west of the water treatment plant, to meet current average daily demand by September 30, 2013. At the time of the inspection, the new equipment was undergoing an initial shakedown and startup.

PERSONS INTERVIEWED AND INDIVIDUAL RESPONSIBILITIES

John Horrell.....Acting Utilities Director
Ralph Martin.....Lincoln/Lancaster County, Senior Env. Health Specialist

OPENING CONFERENCE

I arrived at JWPWTP at 0730 hours, along with Mr. Martin. We attempted to enter by the front door but it was locked. We walked around to the south side of the building and were able to inquire about finding Mr. Horrell. He was summoned and he showed us where we could set up my equipment just off the entrance foyer and next to the main equipment room.

I retrieved my computer and scanner, and entered the front door, which was now unlocked. Although not asked to, we signed in the guest log in the foyer. The last entry in the guest log was for some children who visited some time ago. I did not observe any attempts to control our entrance into the facility.

I set up my equipment and Mr. Martin and I were joined by Mr. Horrell. I discussed briefly the reasons for JWPWTP's selection for a RMP inspection. I presented my credentials and I informed Mr. Horrell that I was with NOWCC and was not a federal employee. I gave a brief summary of the relationship between NOWCC and EPA along with a brief summary of my background. I also provided both Mr. Martin and Mr. Horrell with my business card.

I began the inspection by outlining the process and explaining that I would be requesting some documents to scan for review. I stated I would list those documents on a signed receipt along with any photographs taken during a tour of the physical facilities. I explained that at the completion of the inspection and tour, I would conduct a closing conference to summarize

any findings and have some completed forms, including the document receipt that would require a signature acknowledging receipt.

I reviewed the individual forms and passed examples to Mr. Horrell for him to examine. I told him that JWPWTP would receive the yellow copy of the completed and signed forms at the closing conference. Mr. Horrell signed the Notice of Inspection (Att. #1). I told him that although I would leave a list of preliminary findings with him, additional findings could result once a more thorough review of the documents took place post inspection.

I completed the multimedia screening checklist with input from Mr. Horrell. I explained the multimedia checklist was not a form that required a signature but I would include a scanned copy of the completed form along with other documents for him at the conclusion of the inspection.

Prior to the inspection, I determined JWPWTP would need to file as a Program 3 if it met the threshold quantity of chlorine since the facility was covered by Process Safety Management under the Iowa State Plan approved by OSHA in July 1985. The state plan covers all private and public places of employment with some exceptions. The NAICS code listed in the last RMP filed by JWPWTP was 22131, water supply and irrigation systems.

Based on the likelihood that the facility was a Program 3, I had previously sent a Program 3 checklist to the facility for use in preparing for the inspection. Mr. Horrell had gathered various documents in preparation for the inspection and had them available for us when we set up my equipment.

PROLOGUE

Please note that in order reduce repetitive verbiage in this report, I state in many elements that I was unable to obtain any documentation related to that element. That statement signifies that when the initial request for documentation did not yield results, the question was rephrased, examples were shown where possible, and the request was made a second time including asking if I could look through the notebooks and folder that were present. If nothing was forthcoming after the second request, a third attempt to obtain the materials was made and included asking if there were any other possible locations for any documents to be stored or filed. In a discussion in this report regarding any element, when it is stated that no

documentation was forthcoming for a particular element, it means the process just described was followed in that instance in that at least three requests were made for the documentation. I received no documents from JWPWTP post inspection except for one operating procedure and three photographs that can be found in previously mentioned on page 7 of this report.

Attachment #7 is a document that I was given during the inspection that is the City of Fort Dodge Process Safety Management Plan written to prevent or minimize the consequence of a catastrophic release of the chlorine used at the water treatment plant. This document appears to have been prepared around April 1995 since that is the earliest date that can be found in the document and is located on page 5 of the attachment.

Based on the fonts and page numbering of subsequent RMP documents, the document in Attachment #7 appears to be the basis for the RMP that was first submitted in 1999. The original documents stated that the chlorine was drawn off the ton containers at approximately 100 pounds per square inch (PSI) and piped to a pressure reduction valve where it is reduced to 20 PSI. The current system in use at the facility at the time of the inspection was a vacuum system, not a pressurized system.

TIER II AND OSHA DOCUMENTS

I was given Tier II submissions from 2012 through 2013. The maximum daily amount of chlorine listed for both years was a range code of 4. This range code covers quantities from 10,000 to 99,999 pounds. The report in 2012 listed 10,690 pounds as the maximum daily amount while the 2013 report listed 10,595 pounds. The average daily amount for the same two years was 5,729 pounds for 2012 and 5,924 pounds for 2013. The last RMP, which was submitted in June 2004, listed a maximum intended inventory of 9,000 pounds.

The OSHA 300 log I received covered the year 2011. The cases described in the OSHA log did not indicate any of the injuries recorded involved a release of chlorine.

The Tier II's and OSHA logs have been collated into Attachment #8.

MANAGEMENT SYSTEM

I asked Mr. Horrell what management system JWPWTP had developed to oversee implementation of the risk management program elements and if the facility had assigned a qualified person or position that had overall responsibility for the program elements. He replied that he was responsible for the risk management because of his job as Superintendent of the water treatment plant. I asked him for documentation of this fact particularly regarding his responsibility as Superintendent for the development and implementation of the RMP. He was unable to provide such documentation.

Based on the lack of development of a management system to oversee the implementation of the risk management program elements and the lack of documented assignment of a qualified person, such as Mr. Horrell, as having overall responsibility of the development implementation of the program with clearly documented lines of authority, the following deficiency was found:

1. **John W. Pray Water Treatment Plant failed to develop a management system to oversee the implementation of the risk management program elements, assign a qualified person or position that has overall responsibility for the RMP, and document persons or positions, other than the qualified individual, who have been assigned responsibilities for implementing elements per 40 CFR 68.15(a-c).**

HAZARD ASSESSMENT

Since the reason for selection of JWPWTP as a target for inspection was the lack of submittal of the required five year update, I asked for the documents supporting the offsite consequence analysis (OCA) the facility used for the June 2004 RMP submission. Mr. Horrell asked what the documentation would look like. I described what documents would contain and showed him examples including the OCA information particulars from the 2004 RMP submission for JWPWTP. He told me that he did not have that type of documentation available. Even if the documentation for 2004 had been available, it has been over 9 years since a review and update of the OCA. Due to the lack of documentation available at the facility, there is

no attachment to this report containing any documents regarding Hazard Assessment.

The June 2004 submission used urban topography for the worst-case scenario (WCS) and the alternative-case scenario (ACS). The WCS was the release of the contents of a ton container (2,000 pounds) over 10 minutes with a distance to endpoint of 4.3 miles. The source for the distance was given as EPA OCA Guidance Reference Tables or Equations. The affected population within the 4.3 miles was given as 30,000, which is approximately 5,000 more persons than the population of Fort Dodge. No source for the affected population given in 2004 submission was available.

The ACS was a pipe leak of 24.0 pounds per minute for 10 minutes. The distance to endpoint was given as 0.62 miles and the affected population was listed as 1,700 in the 2004 submission again using the same source for the distance to endpoint and no source for the affected population.

While with Mr. Horrell, I used RMP*Comp to calculate the distances to endpoints using the parameters he gave me. The distance to endpoint for the WCS was 0.9 miles and 0.1 miles for the ACS. Both released were in an enclosed space in direct contact with outside air. I left electronic copies of the RMP*Comp printout with him as part of compliance assistance.

An observation I made was that since chlorine gas is approximately 2.5 times as heavy as atmospheric air, it stays close to the ground and does not rise to any extent; the location of the facility in a river valley below nearby public receptor would probably help mitigate the number of affected person.

I also provided Mr. Horrell a Word document with a hot link to the University of Missouri website that can be used to determine affected populations and one with the link to RMP*Comp. I also explained to Mr. Horrell how to access the free software program, MARPLOT, available from EPA that can be used to determine populations.

Based on the interval of at least nine years between reviews and updates of the OCA and failure to maintain records of the data used to determine population and receptors for the last submission, the following deficiencies were found:

2. **John W. Pray Water Treatment Plant failed to review and update the offsite consequences analyses at least once every five years per 40 CFR 68.36(a).**

3. **John W. Pray Water Treatment Plant failed to maintain the records for the offsite consequences analyses per 40 CFR 68.39(a-e).**

PROCESS SAFETY INFORMATION

Attachment #9 is the collection of documents I was able to obtain from JWPWTP regarding Process Safety Information (PSI) with the exception of some P&IDs that are included in Folder #9 due to space limitations.

What was available from JWPWTP regarding the hazards of the regulated substance was the MSDS for the chlorine used in the water treatment system. The MSDS was from DPC and was dated January 2010. This is the most current revision available from DPC and is available online at their website. The MSDS can be found on pages 1-3 of the attachment.

The information pertaining to the technology of the process I was able to obtain included a block flow diagram, maximum intended inventory and the safe upper and lower limits for operation. The facility was not able to provide compiled written information on the process chemistry or consequences of deviations. Based on the lack of these compiled and written documents, the following deficiency was found:

4. **John W. Pray Water Treatment Plant failed to complete a compilation of written process safety information pertaining to the technology of the process that included process chemistry and consequences of deviation per 40 CFR 68.65(c)(1)(ii & v)).**

Compiled and written information the facility had available on the equipment in the process included materials of construction, P&IDs, electrical classification, relief system and ventilation system designs, design codes and standards employed: and safety systems. These can be found in Attachment #9 with the exception of the P&IDs, which were photographed and are included in Folder #9.

The facility was unable to provide documentation that the equipment in the system complies with recognized and accepted engineering practices. Based on the lack of this documentation, the following deficiency was found:

5. **John W. Pray Water Treatment Plant failed to complete a compilation of written process safety information pertaining to the equipment in the process that included documentation that the equipment complies with recognized and generally accepted good engineering practices per 40 CFR 68.65(d)(2).**

PROCESS HAZARD ANALYSIS

When I requested the process hazard analyses (PHAs) performed at JWPWTP, I was provided the documents contained in Attachment #10 that all have dates from the late 1990s and up to the year 2000. It was difficult to follow the timeline in the documents since the page numbering was neither continuous nor complete.

The original 1999 RMP submission indicated that a PHA was conducted in April 1999. Page 7 of the attachment indicates that a review of the process Safety Management Plan was conducted on July 8, 1999. That same page lists changes that were made to existing equipment since the implementation of the plan in May 1995. I could not find, nor was I provided, any PHA documents with the April 1999 date.

Furthermore, on page 10 of the attachment, the changes made in December 2010 to the 2004 RMP include changing the old PHA completion date from the April 1999 date originally submitted in the 2004 RMP submission to June 2009 that currently appears.

The documentation found on page 4 of the attachment indicates the 1999 review was a What–If methodology. The top of page 7 indicates that those participating in the review were an operator, the plant superintendent, and a safety and health consultant. The questions addressed in the first three pages of the attachment cover the seven elements of §68.67(b). What I was not provided and could not find was the facility's system to address the team's findings and recommendation in a timely manner, document the resolution, document the actions to be taken, development of a written schedule for completing the actions and communication of the actions to affected employees.

Based on the lack of the items listed in the previous paragraph, the following deficiency was found:

6. **John W. Pray Water Treatment Plant failed to establish a system to promptly address the process hazard analysis team's findings and recommendations; assure that the recommendations are resolved in a timely manner and that the resolution is documented; document what actions are to be taken; complete actions as soon as possible; develop a written schedule of when these actions are to be completed and communicate the actions to operating, maintenance, and other employees whose work assignments are in the process and who may be affected by the recommendations or actions per 40 CFR 68.67(e).**

Even though the 2010 update of the 2004 RMP submission listed a PHA as being conducted in June 2009, there was no evidence or documentation available. Based on the lack of documentation of a 2009 PHA or one conducted between 1999 and 2009, the following deficiency was found:

7. **John W. Pray Water Treatment Plant failed to update and revalidate the initial process hazard analysis at least every five years after its completion by a team meeting the requirements in §68.67(d) to assure that the process hazard analysis is consistent with the current process per 40 CFR 68.67(f).**

If JWPWTP did perform the first PHA in 1999, again in the intervening years between 1999 and 2009 on a 5 year schedule in 2004, and in 2009 as listed in the current RMP submission, the PHAs were not retained. Therefore, the following deficiency was found:

8. **John W. Pray Water Treatment Plant failed to retain all PHAs and updates as well as resolutions for the life of the process per 40 CFR 68.67(g).**

OPERATING PROCEDURES

During the inspection, I was given documents that related to Operating Procedures (SOPs) as part of several other element inquiries. I have pulled those documents together and they are include at the end of this report as Attachment #11. There is no date on any of the documents that would

enable one to determine which is the most current. However, pages 3-5 of the attachment are in the same format and when addressing disconnecting and reconnecting a container, they refer to pressure in the feed line. The facility now uses a vacuum system instead of a pressurized system; these instructions would be considered outdated. They were still available to employees and operators.

The tank change SOP was the only SOP at JWPWTP and it only addresses normal operations and no other operating phases such as emergency shutdown. The only personal protective equipment addressed in any of the SOPs was the use of a hard hat. Based on lack of several of the elements required in operating procedures that provide clear instructions for safely conducting activities involved in the covered process, the following deficiency was found:

9. **John W. Pray Water Treatment Plant failed to develop and implement written operating procedures that provided clear instructions for safely conducting activities involved in the covered process that addressed each operating phase, operating limits, safety and health considerations, and safety systems per 40 CFR 68.69(a)(1-4).**

The SOPs I received had no dates so it was not possible to determine the last time they were reviewed or updated. However, the RMP correction filed in December 2010 for the 2004 submittal indicated that the old review date of the SOPs was in May 1999 and the most recent one was June 2009. Page six of Attachment #11 has these dates highlighted in yellow. No documentation was available for these dates or any other dates to demonstrate that the operating procedures had been reviewed or updated. Based on the lack of annual review and update of the operating procedures found in the RMP submissions, the following deficiency was found:

10. **John W. Pray Water Treatment Plant failed to certify annually that the operating procedures are current and accurate per 40 CFR 68.69(c).**

Post inspection, I received a one-page document from Mr. Horrell that was titled Chlorine Tank Change Part II. While it does clarify a tank change out procedure, it did not address the deficiency stated in #9. The document can be found as page 7 of Attachment #11.

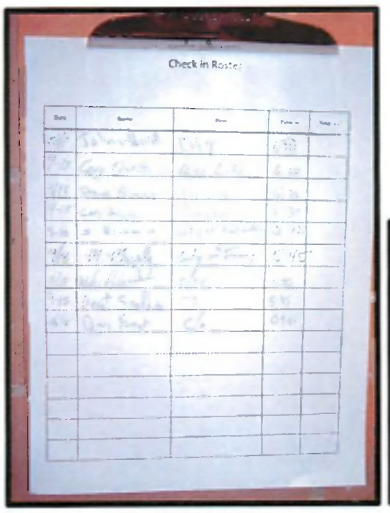
SAFE WORK PRACTICES

I was provided safe work practices for only two operations, lockout/tagout (LOTO) and confined space entry. Those practices are included in Attachment #12.

JWPWTP did not provide safe work practices for opening process equipment and piping or control over support personnel entrance into the stationary source. Based on the lack of these two safe work practices, the following deficiency was found:

11. **John W. Pray Water Treatment Plant failed to develop and implement safe works practices to provide for opening process equipment or piping and control over entrance into a stationary source by maintenance, contractors, laboratory, or other support personnel per 40 CFR 68.69(d).**

Post inspection, I received three photographs attached to the same email that contained the one-page document mentioned in an earlier paragraph. The three photographs appear to be related to a safe work practice to control the hazards possible from support personnel entrance into the stationary source. There were no written documents accompanying these photographs that developed the safe work practice regarding controlling support personnel entrance into the stationary source. The photographs are shown below.



None of the photographs or documents attached to the email addressed opening process equipment or piping.

TRAINING

When I asked about training of operators and employees who are involved in the covered process, I was told that new operators/employees are trained by observing experienced operators and then demonstrating that they can perform the same operation while being supervised. When I asked about documentation required under §68.71(c), I was given the page that appears in this report as Attachment #13 showing the operator obtaining CEUs necessary to keep their level of certification necessary to operate a water treatment plant in the state of Iowa. After talking to Laurie Sharp with the Iowa Department of Natural Resources regarding the training required for the CEUs, it appears that some of the training may address operating procedures in general but would not be specific to a particular water treatment plant.

Without specifics of the training for the CEUs and lack of documents that identify each of the employees involved in the process, date of the training including the initial training by observing an experienced operator, that the employee understood the training, and means to verify that understanding, the following deficiency was found:

12. **John W. Pray Water Treatment Plant failed to provide refresher training at least every three years, and prepare a record which contains the identity of the employee, the date of training and the means used to verify that the employee understood the training per 40 CFR 68.71(b-c).**

MECHANICAL INTEGRITY

JWPWTP did not have written procedures for process maintenance activities with the exception of seven equipment items that were installed in 2001 and for which I was presented the owner manuals. The seven pieces of equipment are listed on page 1 of Attachment #14. The remainder of the equipment in the process such as piping systems and other valves, relief and vent systems including the ventilation system, controls including monitoring devices, sensors, alarms, and interlocks had no written

procedures to maintain the ongoing integrity of the process equipment. The owner's manuals for the seven items mentioned in the first sentence can be found in Folder #14.

Based on the lack of written procedures outlined above, the following deficiency was found:

13. **John W. Pray Water Treatment Plant failed to establish and implement written procedure to maintain the ongoing integrity of process equipment per 40 CFR 68.73(b).**

The facility maintenance personnel and operators are the same individuals and, as such, are trained initially via observation and demonstration. As previously stated, there was no documentation available to demonstrate that maintenance personnel had this training to include identity of the employee, date of training, etc.

When asked if inspections and tests were performed on process equipment, I was told that the system is inspected every day. I asked for the completed daily inspection checklists and received the document that is pages 2-6 of Attachment #14. This document is a log of what maintenance occurred between July 16, 2007 and December 21, 2011, not inspections conducted.

The frequency of inspections is determined by the manufactures recommendations and experience. The only tests performed at the facility are lab tests to check chlorination output versus chlorine levels in the outgoing water.

Based on the stated inspection schedule and the lack of checklists or documents to support those inspections, the following deficiency was found:

14. **John W. Pray Water Treatment Plant failed to document each inspection and test that has been performed on process equipment. The documentation did not identify the date of the inspection or test, the name of the person who performed the inspection or test, the serial number of other identifier of the equipment on which the test or inspection was performed, a description of the test or inspection and the results of the inspection or test per 40 CFR 68.73(d)(4).**

I asked if deficiencies identified by the inspections are corrected before further use or in a timely and safe manner. I was told they were. Without any documentation, I was unable to verify or disprove. I accepted their statement.

The plant had a changeover of equipment from pressure to vacuum in 2001. I asked about quality assurance or how the staff determined that the new equipment was fabricated and suitable for the chlorine process. I was told they depended on the engineering and construction firms to make sure but had no documentation to show that the task was performed. I inquired what checks and inspections were performed to assure that the equipment was installed properly and consistent with design specification and the manufacturer's instructions. Again, I was told they were dependent on the engineering and construction firms but had no verification.

Based on the lack of verification of items in the previous paragraph, the following deficiency was found:

15. **John W. Pray Water Treatment Plant failed to assure that the construction of new plants and equipment as it is fabricated is suitable for the process application for which they will be used. There was also a failure to perform appropriate checks and inspections to assure that equipment was installed properly and consistent with design specifications and the manufacturer's instructions per 40 CFR 68.73(f)(1 & 2).**

When a spare part or maintenance material is received, the operators/maintenance individual making the repair checks the item against what was ordered and in the case of a spare part, is identical to what is being replaced. However, there was no written procedure available for guidance.

MANAGEMENT OF CHANGE (MOC)

I asked for the JWPWTP's written procedure to manage change. The process stated in the Prologue was followed and no procedures or forms were forthcoming.

Based on the lack of any MOC documentation whatsoever, the following deficiency was found:

16. **John W. Pray Water Treatment Plant failed to establish and implement written procedures to manage changes to process chemicals, technology, equipment, and procedures: and changes to stationary sources that affect a covered process and other elements of 40 CFR 68.75(a - e).**

Mr. Howell indicated that they had not needed to manage change since nothing had changed and I pointed out the change from a pressurized chlorine system to a vacuum system that occurred since their original PSM in the mid 1990s and filing of the initial RMP in June 1999.

PRE-STARTUP REVIEW (PSSR)

I asked for the pre-startup safety review that should have been conducted before chlorine was introduced into the new vacuum delivery system since the change would have require a change in the process safety information especially regarding the equipment in the process. I was told the same things as before with regard to the MOC. Based on lack of a PSSR prior to the introduction of chlorine into the new system, the following deficiency was found:

17. **John W. Pray Water Treatment Plant failed to perform a pre-startup safety review for modified stationary sources when the modification was significant enough to require a change in the process safety information and other elements of 40 CFR 68.77(a-b).**

COMPLIANCE AUDITS

The RMP submitted for JWPWTP in 1999 was blank where a date for a completed Compliance Audit would have been entered. The RMP submitted in 2004 was also blank. The only reference I found to compliance audits in any of the documents from JWPWTP is the page listed as Attachment #15.

After questioning Mr. Howell at length regarding Compliance Audits, I was left with the observation that the facility had never conducted one. Therefore, based on the lack of any compliance audits, the following deficiency was found:

18. **John W. Pray Water Treatment Plant failed to certify they have evaluated compliance with the provisions of Subpart D at least every three years to verify that procedures and practices developed under this subpart are adequate and are being followed. They also failed to have an audit conducted by at least one person knowledgeable in the process; develop a report of the findings; promptly determine and document an appropriate response to the findings; document that deficiencies have been corrected and retain the two most recent compliance audit reports per 40 CFR 68.79(a-e).**

INCIDENT INVESTIGATION

JWPWTP had not reported any accidental releases on their RMP submissions or corrections. However, some of the documents provided during discussion of the PHAs contained the information found in Attachment #16. The items highlighted in yellow would seem to have occurred prior to 2000 since that date is referenced at the top of the page as being in the past.

Even from the brief descriptions in the attachment, it would appear that at least one where the chlorine sprayed onto the employee's arm would have been reportable. Two others where chlorine leaked might have been reportable. The fourth one, where the pressure regulator was left out of the system, might not have been reportable but certainly would have required an investigation as a near miss. I did ask for the reports to use as an example in an attachment but they were not available. Since these incidents appeared to have occurred prior to 2000, it was past the five years these reports have to be retained.

I asked for forms or documents for any incidents that had occurred within the last five years. I was told that there were no incidents with chlorine within that time. I asked for the forms that the facility would use to capture

the information for an incident investigation. I was not provided any forms or documents. I did discuss with Mr. Horrell the need for the incident investigation to begin within 48 hours and the desirability of capturing that information on the incident investigation form.

At the time of the inspection, I cited the facility for the following deficiency:

19. **John W. Pray Water Treatment Plant failed to prepare an investigation report at the conclusion of an incident investigation that included at a minimum the date of the incident, date investigation began, description of the incident, factors that contributed to the incident and any recommendations resulting from the investigation. They also failed to establish a system to promptly address and resolved any incident report findings; document any resolutions and corrective actions; review the report with all affected personnel and retain any reports for five years per 40 CFR 68.81(d-g).**

However, this was based on the lack of forms or documents to capture information related to:

- Date of the incident
- Date the investigation began
- Incident description
- Factors contributing to the incident
- Recommendation

The fact that I did not receive such forms or documents does not provide proof that the facility is not capable of capturing the information. Without an actual incident report to review, I also was not able to substantiate JWPWTP doesn't promptly resolve and document resolutions of the report's findings and that the findings are not reviewed with affected personnel. Therefore, I erred in citing the facility and this finding is without merit based on lack of substantiation on my part.

Therefore, I would have to conclude I found no deficiency in JWPWTP's Incident Investigation and the preliminary findings was incorrect.

EMPLOYEE PARTICIPATION

As with other elements such as MOC, PSSR, and Compliance Audits, the facility did not have written documentation. This was confirmed by email with Mr. Horrell on November 7, 2013. Thus, based on the lack of this documentation the following deficiency was found:

20. **John W. Pray Water Treatment Plant failed to develop a written plan of action regarding the implementation of the employee participation required per 40 CFR 68.83(a).**

HOT WORK PERMIT

I asked the staff of JWPWTP for Hot Work Permits used when such work is conducted near covered processes. I was told the city of Fort Dodge, including the water treatment plant, does not have a Hot Work Permit program. The fact that JWPWTP does not have a Hot Work Permit was reconfirmed with Mr. Horrell by email on November 8, 2013

Based on the lack of a program, I assume that hot work permits are not issued for such work near covered process. Since permits are not issued, there is no way that any other elements of §68.85 could be met. Therefore, the following deficiency was found:

21. **John W. Pray Water Treatment Plant failed to issue hot work permits for such work near covered processes per 40 CFR 68.85(a).**

CONTRACTORS

I asked Mr. Howell for any documentation regarding contractor evaluation and performance and an example of any documents used to make these evaluations on a recent contractor. Mr. Howell said he had no documents.

I asked Mr. Howell how JWPWTP evaluates information regarding contractor's safety performance and programs. He told me that the consulting engineer on the project and not the city engineer or staff performs this evaluation.

I asked if the facility informs contractors of the known potential fire, explosion, and toxic release hazards associated with the contractor's work and the process. Mr. Horrell informed me that it was done but there was no documentation.

Mr. Horrell told me that regarding the emergency response program or action plan, he talks to the general contractor about the rally points to be used when there is need for evacuation due to a release but again there was no documentation. This was an interesting statement since I later discovered there was no emergency action plan with rally points listed.

As discussed earlier during the element of Safe Work Practices, the facility did not have a procedure to control support personnel entrance into the stationary source. This included contractors. Based on this, the following deficiency was found:

22. **John W. Pray Water Treatment Plant failed to develop and implement safe work practices consistent with §68.69(d) to control the entrance, presence, and exit of the contract owner or operator and contract employees in covered process areas per 40 CFR 68.87(b)(4).**

The JWPWTP evaluates contractor compliance with employees training in safety work practices by observation while the contractor's employees are on site. The same process of evaluation is used regarding contractor employees being instructed on the known potential fire, explosion, or toxic release hazards of the job and applicable provision of the emergency action plan.

Contractor documentation of employee ID, date of training, and means to verify training was understood is evaluated by the consulting engineer for a given contract.

JWPWTP operator and employees observe and report to the contractor if contractor employees do not follow the safety rules of the stationary source including safe work practices.

I was told contractors are instructed to advise the facility of unique hazards posed by the contract work or hazards found by the contractor's work.

It was my observation that JWPWTP lacked any documents regarding contractors even for those on the site during the inspection. It was my observation from talking to Mr. Horrell that there is a great deal of dependence on the consulting engineer when contractors are involved in a project at the water treatment plant. I was not able to determine the reason for this dependence.

SUBPART E - EMERGENCY RESPONSE

Attachment #17 is all of the documentation available at the facility regarding emergency response. The portion of the page dealing with emergency response has been highlighted in yellow by the inspector.

The half page of documentation does not mention calling 911, the local fired department, or the local LEPC. It does not address employees evacuating the area, assembling at rally points for accounting, nor does it identify any rally points. Mr. Horrell told me that JWPWTP has a direct line to the Fort Dodge Fire department, local HAZMAT team, and regional LEPC and that the employees at the water treatment play will not respond to a release.

However, the documentation in Attachment #17 stated that employees must come out of the room where the chlorine is being released and put on the self-contained breathing apparatus. Upon reentering the room with the respiratory protection, the employee should turn off the valve on the chlorine container or stop the flow of chlorine. If the source of the leak is not known, the employee is to use ammonia solution to check the entire system of the source of the leak.

I contacted the local agency listed in Section 9 of the 2004 RMP submission, Region V LEPC. I spoke with Ms. Stickrod, of the Region V HAZMAT Response Commission. She referred me to Mr. Tony Jorgensen, Chairman of the Region V LEPC. During the discussion with Mr. Jorgensen, he informed me he was formerly with the Fort Dodge Fire Department. Both he and Ms. Stickrod conveyed to me that the Fort Dodge Fire Department HAZMAT response team, which services the counties in Region V, has done training exercises at the water treatment plant. Mr. Jorgensen was able to send me the Webster County Emergency Support

Function 10 Hazardous Material document where facilities with hazardous material are listed for coordination with first responders in the event of an emergency. On pages 85-87 of that document, the JWPWTP is listed. Those pages have been added to Attachment #17 as pages 2-4.

Based on the information I received from Ms. Stickrod and Mr. Jorgensen, the JWPWTP appears in the community emergency response plan. My observations were that an employee would not be able to read or study the facility's emergency action plan to determine what their actions or responses should be during an emergency. Without training records, it was not possible to determine if an exercise has been conducted simulating an accidental release and/or an evacuation. The employees and the facility would benefit from a written comprehensive emergency action plan that details what the employees are to do and emergency numbers to call, even if the emergency number is a simple 911.

SUBPART G – RISK MANAGEMENT PLAN

Prior to the inspection, I reviewed the RMP last submitted by the facility, which was June 2004. The Executive Summary included all of the required elements except planned changes to improve safety. Based on the lack of that element in the summary, the following deficiency was found:

23. **John W. Pray Water Treatment Plant failed to provide an executive summary in the RMP that included a brief description of planned changes to improve safety per 40 CFR 68.155(f).**

Also noted during a review prior to the inspection of the RMP submissions from the facility, the most recent submission indicated that the next due date for the 5-year revision and update was June 18, 2009. At the time of the inspection in 2013 and at the conclusion of the writing of this report, that 5-year submission had not taken place.

Based on the lack of a 5-year revision and update of the RMP, the following deficiency was found:

24. **John W. Pray Water Treatment Plant failed to review and update the RMP at least once every five years from the**

date of its initial submission or most recent update required by §68.190(b)(2-7) per 40 CFR 68.190(b)(1).

CLOSING CONFERENCE

At the closing conference, I went through the completed forms explaining in particular the preliminary findings and noting that a post inspection review of documents might reveal other findings.

Mr. Horrell signed the Receipt for Samples and Documents (Att. #2), and Notice of Preliminary Findings (Att. #3). I asked if any of the documents or pictures were confidential business information (CBI). Mr. Horrell indicated that none of the documents contained confidential business information and this was so noted on the CBI form. None of the photographs contained any CBI either. Mr. Horrell signed the Confidentiality Notice (Att. #4) indicating no CBI documents were taken during the inspection. I provided Mr. Horrell a copy of the signed forms. I scanned the signed forms along with the completed Multimedia Checklist (Att. #5) to the USB flash drive. The digital photographs taken during the tour were also copied to the USB flash drive.

After copying the contents of the USB flash drive to the CPM folder on my laptop, I loaned the flash drive to Mr. Horrell to allow him to copy its contents to his computer after which the flash drive was returned to me.

During the inspection, Mr. Horrell was professional and courteous in his dealings with at all times.

I packed up my materials and equipment and departed the facility at approximately 1600 hours on August 28, 2013.

Bob Munson
Compliance Inspector
November 14, 2013